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ORIGINAL ARTICLE

Role of H. Pylori infection with Recurrent Abdominal Pain in Young Age Children

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ABSTRACT

Objective: A study was conducted to determine the incidence of Helicobacter pylori infection in children who had chronic abdominal pain.

Study Design: Cross-sectional study.

Study and Duration of Study: This research was carried out during 1.1.2019 to 1.6.2020 in the DHQ Sargodha.

Materials and Methods: According to the findings, there were 200 participants in the study, and 8 percent of those with Recurrent Abdominal Pain had Helicobacter.

Results: The patients ranged in age from 12.43 to 12.43 and 1.23 months on average. Between 8 and 16 years old, the average age of the sample group was observed. The average number of months that participants were bothered by stomach discomfort was 4.23. The presence of Helicobacter pylori was confirmed in 47% of those who were tested.

Conclusion: Helicobacter pylori is a common cause of recurrent abdominal pain in children, and it can be treated with antibiotics. In children and adolescents, it is a serious problem, and more research is needed to determine the risk factor that is linked to an increased Helicobacter Pylori infection rate.

Keywords: Recurrent Abdominal Pain, abdominal pain, Helicobacter pylori

INTRODUCTION

Many young people seek medical attention because they are suffering from constant stomach pain (RAP). Recurrent abdominal pain (RAP) is a major source of absences for school-aged children (4 percent to 25 percent). In spite of its benign appearance, recurrent abdominal pain is associated with a wide range of morbidities, such as poor school attendance, laparotomies and hospitalisation; in some cases, the symptoms persist into adulthood [1]. School absenteeism, poor physical ability, and social disengagement occur on a regular basis in school children as a result of RAP, resulting in increased hospital visits and a severe impact on the child's health. One in three people will suffer from chronic pain for at least five years, indicating that the illness burden is vastly underestimated. Children with recurring stomach discomfort are more likely to develop Irritable Bowel Syndrome (IBS), which is a gastro-intestinal ailment. Helicobacter Pylori, a rod-shaped Gram-negative bacteria that thrives in the stomach's acidic environment, is the most common growth location. Some of the disorders it causes include chronic gastritis, stomach adenocarcinoma, ulcers, non-ulcer dyspepsia, and mucosa-associated lymphoid tissue cancer (MALT) lymphoma [2].

An estimated half of the world's population has Helicobacter Pylori in their guts. Helicobacter Pylori is increasingly concentrating its efforts on nations in developing. For the most part, long-term Helicobacter Pylori infection is asymptomatic, but in certain cases it may develop to diabetes-related chronic gastritis, or even peptic ulcer disease [3]. Experts say epigastric pain is a sign that something is wrong, and the researchers found a strong correlation between stomach discomfort and Helicobacter Pylori in paediatric patients. Helicobacter Pylori infection has not been demonstrated to cause stomach discomfort in previous investigations, according to the researchers [4]. Helicobacter Pylori infections are to blame for 65 percent of Turkish paediatric patients with recurrent stomach discomfort and dyspepsia. According to a single research, 70% of the population (873) was affected. In children, Helicobacter Pylori causes persistent stomach pain. A primary purpose of this research is to determine the prevalence of Helicobacter pylori in children who have recurrent abdominal pain (RAP). The prevalence of Helicobacter Pylori, despite the fact that it is ubiquitous in the general population, has been the subject of considerable speculation in the medical literature [5]. As an example, some studies have shown a relationship between Helicobacter Pylori and Recurrent Abdominal Pain in children, while others have not. Recurrent Abdominal Pain in local children is now being studied and will be studied in the future [6]. To help local gastroenterologists and paediatricians build future research strategies, this study's results will give data on the scope of the problem in the area.

MATERIALS AND METHODS

This study was conducted in DHQ Sargodha between 1.1.2019 and 1.6.2020. The inquiry took place over the period of six months. Helicobacter was found in 8 percent of the children with Recurrent Abdominal Pain in the research, which comprised 200 participants (RAP). With a 95% confidence interval and a 4% margin of error, the sample size was calculated in accordance with the World Health Organization's standard procedure. The study included both male and female children aged 5 to 16 who had been experiencing recurrent stomach ache for at least three months before being included in the study. Children who had previously been diagnosed with or treated for Helicobacter Pylori were excluded from the trial, as were those who had taken a proton pump inhibitor (PPI) in the preceding two weeks as well.

Data Collection Procedure: The hospital's research and ethical board gave the probe the the light. As defined by Rome II criteria for Recurrent Abdominal Pain, all patients who met the inclusion criteria were enlisted as study subjects via the Outdoor Patient Department. Informed permission was obtained from each of the children's guardians after they had been made aware of the study's goals and significance. Each of the youngsters was examined by a doctor. Under rigorous sterile conditions, 5 mL of blood was collected for Helicobacter Pylori identification using ELISA developed in-house at the hospital laboratory. All of the tests were carried out at the hospital laboratory by pathologists.

SPSS version 14 was used to analyse the data (Statistical Package for the Social Sciences). Age and duration of stomach discomfort were used as quantitative factors to calculate the mean standard deviation (mean SD). The percentages and frequencies of Helicobacter Pylori, as well as other factors, were tallied. Helicobacter Pylori was divided into groups based on gender and age in order to study the influence of age and gender on the bacterium. The chi-square test with a p-value of less than 0.05 was utilised for post-segmentation analysis..

RESULTS

The study included 200 youngsters with recurring abdominal pain. Twelve years, four months, and one day old was the average age of the participants in this study. According to the present research, participants ranged in age from 8 to 15, with a maximum age of 15 and a minimum age of 5 years. There were 15.58 percent of patients aged 5 to 8 years; 63.52% of patients aged 8 to 12 years; and 73.68% patients aged 12- to 16-years-old, according to results from separating the sample into various age groups. This study's sample was split evenly between boys and girls after they were segregated based on their gender (Table 1).

Table 1: Gender based distribution

			H.pylori		Total
			Yes	No	
Gender	M	F	48	52	100
		%	48%	52%	50%
	F	F	46	54	100
		%	46%	54%	50%
Total		F	94	106	200
		%	47%	53%	100%

Table 2: Distribution of H.pylori infection on the basis of age

		H.pylori			Total
		Yes		No	
Age groups	5-8 y	F	12	65	77
		%	15.58%	84.41%	100%
	8-12 y	F	54	31	85
		%	63.52%	36.47%	100%
	12-16 y	F	28	10	38
		%	73.68%	26.31%	100%
Total		F	94	106	200
		%	47%	53%	100%

Stomach discomfort lasted an average of 4.23 ± 0.47 months for those affected. Helicobacter Pylori was detected in 47% of individuals who underwent an ELISA test. Helicobacter pylori was identified using the ELISA method in a medical laboratory under strict septic conditions using 5 mL of blood. The p-value of 0.67, obtained from the Chi-square test, indicates that the study's findings are not statistically significant. Analysis of Helicobacter Pylori based on age groups yielded a statistically negligible difference (p-value of 0.67) suggesting that the research was not statistically significant, according to the Chi-square test (Table 3).

Table 3: Distribution of H.pylori infection on the basis of gender

Gender	Frequency	Percentage
Male	100	50%
Female	100	50%
Total	200	100%
Gender	Frequency	Percentage
Male	100	50%
Female	100	50%
Total	200	100%

However, when Helicobacter Pylori was stratified by gender, the chi-square test indicated a p-value of 0.44 (Table 4) indicating that the difference was statistically significant when stratified by gender.

DISCUSSOIN

More than 5 percent of kids in the Netherlands saw their paediatrician for stomach pain while at work, compared to 2 percent to 4 percent in the United States and Austria. "Functional abdominal pain" describes medical conditions that have been incorrectly identified [7]. One-tenth to one-fifth of patients in the school age range report having a disrupted social life, poor physical and mental activity, and failing to complete their schooling as a result of their recurrent need for medical attention. As many as one in three youngsters have been experiencing stomach ache for at least five years [8]. Irritable Bowel Syndrome (IBS) is regarded to be the primary cause of functional gastrointestinal disorders in children (IBS). Childhood functional abdominal discomfort may have a significant impact on the health of a kid if it persists for a long period of time. An rise in adult non-gastrointestinal symptoms has only lately been connected to a functional gastro-intestinal illness, according to new research [9]. Abdominal pain in children who are also experiencing somatic sensations might be used as a clinical sign to suggest an unfavourable outcome [10]. When a patient has suffered long-term chronic stomach discomfort, as well as gastrointestinal symptoms, the presence of parents may be associated. Family doctors may use this information to identify individuals who are at risk of developing chronic abdominal discomfort. Among youngsters, Helicobacter Pylori is the world's most common pathogen. Peptic ulcers and chronic gastritis are growing more common, however despite this fact, more than half of the world's population is infected with Helicobacter Pylori, and the majority of infected children show no symptoms. Infection rates with Helicobacter Pylori vary by age, race, and location [11]. The age-prevalence connection shows that the prevalence of Helicobacter Pylori infection increases with age. Even within the same household, Helicobacter Pylori may be

transferred from one person to another. There were 15,916 healthy adults over the age of 16 who took part in the 2005 study. According to the study's findings, the prevalence of Helicobacter Pylori increased with time, with 29.3% prevalence in their twenties, 49.1% in their thirties, 57.8% in their forties, 61.5 % of the population in their fifties. Comparable results have been made by other underprivileged nations such as Benin and India and by other previously published research from Pakistan that have reached similar conclusions [12]. In Germany, New Zealand, and the United States, the prevalence of Helicobacter Pylori infection in children under the age of five ranges from 7 percent to 15 percent. The discrepancy in Helicobacter Pylori prevalence between children in developing and developed nations may be explained by a mix of factors, including poor environmental conditions, low socioeconomic position, and poor living situations [13]. Helicobacter Pylori infection has been linked to poorer socioeconomic status in the research. Low-income individuals are more likely to get infected with Helicobacter Pylori due to their unsanitary habits and living conditions. However, this isn't always the case since there are other possible sources of infection, such as people who don't belong to a certain social class. It's hard to tell if Helicobacter Pylori infection and RAP go hand in hand. In India and Sweden, the most recent research found no link between Helicobacter Pylori infection and RAP. RAP and Helicobacter Pylori infection do not seem to be linked in meta-analyses or thorough studies. According to the findings of this study, children with RAP are more prone to have Helicobacter Pylori infection than other children [14]. Comparable studies have been done in the United States and Saudi Arabia. Among children of low socioeconomic status, helminthiasis is the most prevalent cause of recurrent stomach discomfort. Children with RAP are often given anti-helminthic medicines by their parents and doctors. According to the results of this study, Helicobacter Pylori may have an extra function in RAP. Further studies on a large number of children are needed to confirm these findings and characterise the function of Helicobacter Pylori in RAP [15]. Participating patients were drawn from a local hospital. The primary restriction of the study was eliminated, allowing the findings to be generalised. Therefore, recruiting individuals from the general paediatric population is very challenging since many patients decline to have their blood drawn for this research. Helicobacter Pylori study in the general population is now restricted to a small number of people as a result of this. Researchers advocate urea breath tests and faecal antigen testing because they are appropriate in poor countries [16].

CONCLUSION

In today's paediatric population, Helicobacter Pylori infection is thought to be the cause of children's persistent stomach pain. As a result, greater research is required to identify risk factors for Helicobacter Pylori infection. Helicobacter Pylori and other associated illnesses will be greatly reduced as a result of this practise.

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